

**ASSESSMENT**

- Preoperative patient evaluation is necessary.
- Requires systematic assessment using standardized pain assessment tools preoperatively, at scheduled intervals postoperatively, in response to new pain, and prior to discharge for optimal results.
- The components of a good assessment will vary but should include both pain and its impact on function.

**PAIN ASSESSMENT COMPONENTS**

- Pain attributes: (onset, intensity, duration, location, description, factors that alleviate/exacerbate)
- Behavioral manifestations of pain
- Impact of pain
- Current and past treatments for pain
- Patient's expectations for pain relief

**Assessing Pain Intensity**

1. Ask the patient to rate their pain on a scale of 0-10, (0 = No pain and 10 = Worst possible pain).
2. Ask patient "What is your current pain level?"
3. Ask patient "What was your worst/best pain level?"
4. Assess and document intensity at each painful site.
5. Ask about the quality of the pain (e.g. dull, burning, stabbing, shooting, etc.).
6. Reassess frequently in the same consistent manner.



**Pre-operative patient assessment**

- Chief complaint
- Medical history
- Surgical history
- Past pain history
- Medications
- Allergies
- Psychosocial history
- Physical exam

**Post-operative patient assessment**

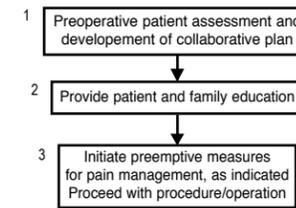
- Assess pain level
- Assess side effects:
  - nausea/vomiting
  - pruritus
  - numbness/weakness
- Interference with function:
  - sleep
  - deep breathing
  - moving
- Patient overall satisfaction

**SIDE EFFECT MANAGEMENT**

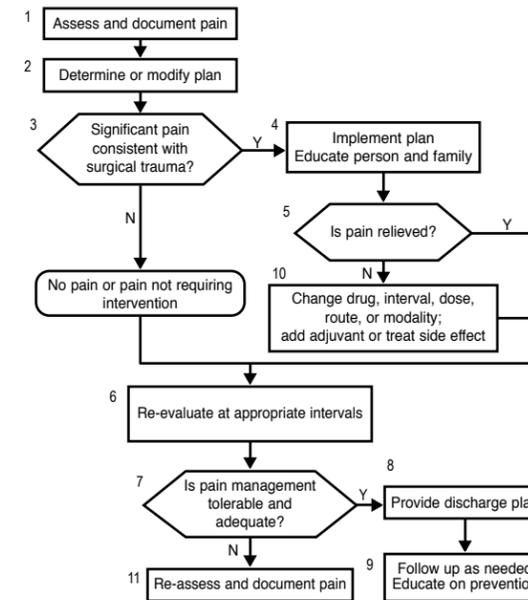
<p><b>Sedation</b></p> <ul style="list-style-type: none"> <li>• Determine etiology</li> <li>• Decrease dose</li> <li>• Increase interval</li> <li>• Stop medication</li> <li>• Consider reversal agent</li> </ul>	<p><b>Itching</b></p> <ul style="list-style-type: none"> <li>• Consider allergic reaction</li> <li>• Decrease analgesic dose</li> <li>• Consider antipruritic</li> <li>• Change analgesic</li> <li>• Change route</li> </ul>
<p><b>Nausea</b></p> <ul style="list-style-type: none"> <li>• Determine etiology</li> <li>• Decrease dose</li> <li>• Change route</li> <li>• Add anti-nausea agent</li> <li>• Change analgesic</li> </ul>	<p><b>Respiratory Depression</b></p> <ul style="list-style-type: none"> <li>• Determine etiology</li> <li>• Decrease dose</li> <li>• Increase interval</li> <li>• Stop Medication</li> <li>• Consider reversal agent such as naloxone and titrate to effect</li> </ul>

**VA/DoD Clinical Practice Guideline for Management of Postoperative Pain POCKET GUIDE**

**PREOPERATIVE MANAGEMENT**



**POSTOPERATIVE MANAGEMENT**



VA access to full guideline: <http://www.oop.med.va.gov/cpg/cpg.htm>  
 DoD access to full guideline: <http://www.cs.amedd.army.mil/Qmc>  
 Sponsored & produced by the VA Employee Education System in cooperation with the Offices of Quality & Performance and Patient Care Services and Department of Defense.

April 2002



**INTERVENTION**

- Intervention should be multimodal and individualized for the particular patient, operation, and particular circumstances. Understanding the range of available interventions and considerations of the type of surgery are essential to provide safe and effective pain management.
- In most instances, more than one intervention will be needed for successful pain management. Selection is determined by balancing the advantages, disadvantages, contraindications, and patient preferences.
- Pharmacologic interventions:
  - ◊ Main classes of medication: opioids, NSAIDs, local anesthetics
  - ◊ Contemporary delivery systems (PCA instead of intermittent dosing via IM or SC) and techniques (neuraxial) are required to improve post operative pain control and patient satisfaction.
- Non-Pharmacologic Interventions
  - Cold
  - Heat
  - Massage
  - Exercise
  - Immobilization/Rest
  - Transcutaneous Electrical Nerve Stimulation (TENS)
  - Hypnosis
  - Distraction
  - Relaxation
  - Positioning
- A discharge plan should be in place prior to discharge, include a plan for continued pain management, and be communicated to patients and those caring for them.

**PATIENT EDUCATION**

- Education of the patient and those involved in their care is central and should:
  - ◊ Provide realistic expectations about pain, the postoperative plan, the discharge plan, and expected outcomes
  - ◊ Decrease emotional distress, enhance coping skills and enable patient participation

**EVALUATION**

- Evaluation of the balance between pain control and side effects should be routine, timely, and specific. The effect of changes in response to inadequate pain or side effects should be evaluated in a timely fashion.

**Equianalgesic Table: Commonly Used Opioid Analgesics - Information and Conversion Tables**

Drug	Duration <sup>1</sup> (hrs)	Equianalgesic doses (mg) <sup>2,3</sup>		Dosage forms available	Cost per day <sup>4</sup>	Comments
		IM	PO			
Codeine	4-6	120	200	Codeine alone: 15, 30 60 mg tablets Combination tablets: Codeine APAP APAP w/codeine #2: 15mg 300mg APAP w/codeine #3: 30mg 300mg APAP w/codeine #4: 60mg 300mg Combination liquid (per 5ml) 12mg 120mg	Codeine alone: 13 tablets/day = \$\$\$\$  APAP w/codeine #3: 13 tablets/day = \$\$	A milder or less potent opioid; must be metabolized to the active metabolite (morphine) Available alone or in combination with aspirin or acetaminophen Do not exceed: 4 grams APAP/day (13 tablets per day) Do not exceed: 2 grams APAP/day with moderate alcohol use (2 beers/day)
Fentanyl (IV)	1-2	0.1	---	Injection: 50 µg/ml	0.2mg IV/day = \$	
Hydrocodone	4-6	---	30	Tablets contain hydrocodone/APAP in amounts varying from 2.5 to 10mg hydrocodone and 500 to 750mg APAP. Elixir contains 7.5/500mg per 15ml Consult your local formulary for available dosage formulations.	8 tablets/day = \$	Available only in combination with APAP. Do not exceed 4 grams APAP/day.
Hydromorphone	4-5	1.5-2	7.5	Injection: 1, 2, 4, & 10 mg/ml Tablets: 1, 2, 3, 4 & 8 mg	4mg IV/day = \$\$\$\$ 20mg PO/day = \$\$	No long acting dosage forms are currently available.
Meperidine	2-4	75	300	Injection: 25, 50, 75 & 100 mg/ml	150mg IV/day = \$\$\$	SHOULD NOT be used in chronic pain due to short duration of action and accumulation of toxic metabolite, normeperidine, which can cause CNS excitation and seizures.
Methadone	4-8	10	20	Tablets: 5 & 10mg Liquid: 5 mg/5ml, 10 mg/5ml, 10 mg/1ml	40mg/day Tablets = \$ Liquid = \$\$\$	Long half-life requires <b>5-7 days</b> between dose increases and close monitoring. Cover with short-acting agent until steady state achieved. Duration of effect increases with repeated use and cumulative effects. Do not administer "prn".
Morphine	4-6	10	30	Injection: 0.5, 1, 2, 4, 5, 8, 10, 15, 25, 50 mg/ml Preservative-free for spinal use: 0.5, 1, 10, 15, 25, & 50 mg/ml PCA syringes: 1 & 5 mg/ml, 30 ml IR tabs: 15 & 30mg CR/SR tabs/caps: 15, 20, 30, 50, 60, 100, 200mg Liquid: 10mg/5ml, 20mg/5ml, 20mg/1ml Rectal suppositories: 5, 10, 20, 30mg	20 mg IV/day = \$\$\$ PCA: = \$\$\$\$\$ IR 60mg/day = \$ CR/SR 60mg/day = \$ Liquid 60mg/day = \$\$\$ RS 60mg/day = \$\$\$	Long acting morphine is dosed every 8-12 hours. Do not administer "prn". Do not crush sustained release tablets Specify concentration of liquid on prescription
Morphine SR/CR	8-12	---	30			
Oxycodone IR	4-6	---	20	IR tablets: 5, 15, 30 mg CR tablets: 10, 20, 40 & 80 mg Liquid: 5 mg/5 ml, 20 mg/1 ml	IR 40mg/day = \$ CR 40mg/day = \$\$\$\$	Oxycodone CR is usually administered every 12 hours. Do not administer oxycodone CR "prn". Do not crush oxycodone CR tablets.
Oxycodone CR	8-12	---	20	IR combination tablets/capsules contain oxycodone/APAP in amounts varying from 2.5 to 10mg oxycodone and 325 to 650mg APAP. Consult your local formulary for available dosage formulations.	IR combination products: 8 tablets/day = \$ 8 capsules/day = \$\$	Do not exceed 4 grams APAP/day (12 tablets of oxycodone /APAP 5/325mg or 8 capsules of oxycodone/APAP 5/500mg)

APAP = Acetaminophen, CR = Controlled-release, IM = Intramuscular, IR = Immediate-release, IV = Intravenous, PCA = Patient-controlled analgesia, PO = Oral, RS = Rectal suppository, SL = Sublingual, SR = Sustained-release

**OPIOID CONVERSION INSTRUCTIONS**

1. Determine the total 24-hour dose of the current opioid.
2. Using the **equianalgesic table** (on the left), find or calculate the equivalent dose of new analgesic for the desired route of administration.
3. When converting to a different opioid, the starting dose of the new opioid should be 50% to 67% (10% to 25% for methadone) of the equianalgesic dose because of incomplete cross-tolerance.
4. Take the 24-hour starting dose of the new opioid and divide by the frequency of administration to give the new dose for the new route.
5. All patients should have breakthrough opioid available during conversion process.

**Example:**

*Patient is receiving morphine 1mg PCA q6min  
He has received 30 doses over the past 24 hours.*

1. Total 24-hour dose of IV morphine is 30 mg.
2. From the equianalgesic table, we calculate that 30 mg of IV morphine is equal to 60 mg of PO oxycodone. The estimated equianalgesic dose of oxycodone is 60 mg per day.
3. 67% of 60 mg of PO oxycodone is 40 mg per 24 hours.
4. Frequency of administration is q6h (4 doses) so the starting dose of oxycodone IR would be 10 mg q6h.

**Footnotes to Equianalgesic Table:**

1. Duration of oral medication is longer than parenterally administered medications.
2. Doses that produce the same analgesic effect as 10 mg of IM morphine.
3. When switching from one opioid to another, the starting dose of new opioid should be 50% to 67% of the equianalgesic dose except when switching to methadone. When switching to methadone, the starting dose should be 10% to 25% of the equianalgesic dose. Opioid dose should then be titrated and individualized to clinical situation and patient response
4. Relative cost expressed as long acting morphine 30mg PO q12h or equivalent per day. (See box at right)

TYPICAL IV PCA DOSING REGIMENS			
DRUG	LOAD	BOLUS/DEMAND	LOCKOUT
Fentanyl	15 to 75 µg (0.5 to 1 µg/kg)	10 to 75 µg	4-6 min
Hydromorphone	0.1 to 0.5 mg (0.002 to 0.01 mg/kg)	0.1 to 0.5 mg	6-8 min
Meperidine	25-50 mg (0.5 to 1 mg/kg)	5 to 25 mg	6-8 min
Morphine	0.5 to 3 mg (0.01 to 0.06 mg/kg)	0.5 to 3 mg	6-8 min

*Lower doses are recommended for opioid-naive patients and mid-range doses for opioid-tolerant patients. Avoid starting opioid-naive patients on the higher end of the dosing range*

**NONSTEROIDAL ANTI-INFLAMMATORY DRUGS**

Generic	Starting dose	Max/day	Cost
Acetaminophen	650 mg PO Q4-6H	4000 mg	\$
Aspirin	650 mg PO Q4-6H	4000 mg	\$
Celecoxib	200 mg PO BID	400 mg	\$\$\$\$
Etodolac	200 mg PO Q8H	1200 mg	\$
Ibuprofen	400 mg PO Q4-6H	3200 mg	\$
Indomethacin	25 mg PO Q8H	200 mg	\$
Ketorolac	10 mg PO Q4-6H	40 mg	\$\$\$
Naproxen	250 mg PO BID	1500 mg	\$
Naproxen Na	275 mg PO BID	1650 mg	\$
Piroxicam	20 mg PO QD	20 mg	\$
Rofecoxib	50 mg PO QD	50 mg	\$\$\$\$
Sulindac	150 mg PO BID	400 mg	\$
Salsalate	1000 mg PO TID	3000 mg	\$

**Footnote to Equianalgesic Table & Nonsteroidal Anti-Inflammatory Drugs**

Treatment costs are expressed only in general, relative terms; consult local references for exact figures. Delivery considerations may supercede drug costs, and technique advantages may overrule cost considerations. \$ = Very low; \$\$ = Low; \$\$\$ = Moderate; \$\$\$\$ = High; \$\$\$\$\$ = Very high.